

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/052509

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01J31/12 H01J9/20 H01J3/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-----------------------|
| X | US 2002/102753 A1 (JOHNSON BURGESS R ET AL) 1 August 2002 (2002-08-01) paragraphs '0009!', '0071!; figures 1,2 | 1,12 |
| Y | ----- | 2,3,5,14 |
| Y | US 5 347 292 A (GE ET AL) 13 September 1994 (1994-09-13) columns 11,16, lines 60-65,15 | 2,3,5,14 |
| A | WO 03/041039 A (KONINKLIJKE PHILIPS ELECTRONICS N.V; VAN DER VAART, NIJS, C; HIDDINK,) 15 May 2003 (2003-05-15) page 9, lines 20-25; figures 1,7 | 1,14,25 |
| A | US 5 757 344 A (MIYATA ET AL) 26 May 1998 (1998-05-26) abstract; figure 11 | 1 |



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *S* document member of the same patent family

Date of the actual completion of the international search

11 April 2005

Date of mailing of the international search report

22/04/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Ruiz Perez, S

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/052509

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|----|---------------------|----------------------------|---------------------|
| US 2002102753 | A1 | 01-08-2002 | WO 02061790 A2 | 08-08-2002 |
| US 5347292 | A | 13-09-1994 | NONE | |
| WO 03041039 | A | 15-05-2003 | EP 1459349 A2 | 22-09-2004 |
| | | | WO 03041039 A2 | 15-05-2003 |
| | | | US 2004256976 A1 | 23-12-2004 |
| US 5757344 | A | 26-05-1998 | JP 3255960 B2 | 12-02-2002 |
| | | | JP 5152640 A | 18-06-1993 |
| | | | DE 4232886 A1 | 08-04-1993 |
| | | | GB 2260641 A ,B | 21-04-1993 |